

Research and Development



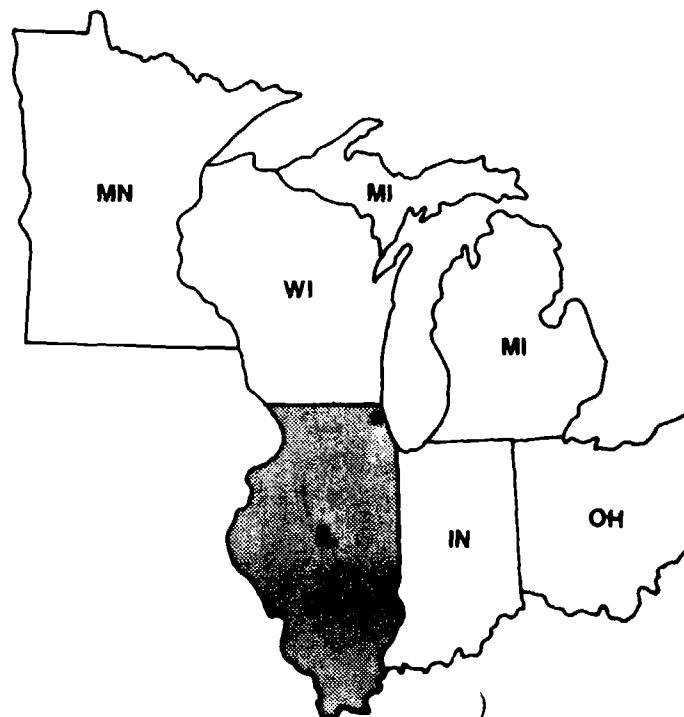
# AERIAL PHOTOGRAPHIC ANALYSIS VACANT LOT SITE North Chicago, Illinois

EPA Region 5 Records Ctr.



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EPA Region 5



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AERIAL PHOTOGRAPHIC ANALYSIS  
VACANT LOT SITE

North Chicago, Illinois

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NOTICE

This document has undergone a technical and quality control and assurance review and approval by personnel of the U.S. Environmental Protection Agency, Office of Research and Development, Characterization Research Division at Las Vegas, Nevada, and is for internal Agency use and distribution only.

## ABSTRACT

This report presents the results of an analysis of historical aerial photographs of the Vacant Lot Site located in North Chicago, Illinois. An Area of Concern, approximately a 0.5 mile radius around the site, was also examined. Eight dates of black-and-white and color photographs were used to analyze the site and the area of concern. This analysis covers photographs obtained in: 1939, 1953, 1954, 1967, 1976, 1981, 1986, and 1994.

Results of the analysis of the site itself revealed that in 1939 disturbed ground was visible east of Pettibone Creek. In 1953, 1954, and 1967, this portion of the site was used as a parking lot. From 1939 through 1986, staining, excavations, mounded material, and tire tracks were present primarily in the northeastern part of the site at the end of an access road. Stain patterns trended into the nearby creek. On the western portion of the site, footpaths and denuded areas were visible in 1976, 1981, and 1986. In 1981, a possible shallow trench was observed. By 1986, it was filled. No significant features indicative of waste disposal activity were observed in 1994.

Within the Area of Concern, buildings constructed and dismantled from 1939 through 1994 were identified and delineated by year of occurrence. Environmentally significant waste-related features visible within the area were also identified. These consisted of solid waste, standing liquid, drums, old tanks, and dark-toned material.

The U.S. Environmental Protection Agency (EPA), Characterization Research Division, Monitoring Sciences Branch in Las Vegas, Nevada, prepared this report for the EPA Region 5 Hazardous Waste Management Division in Chicago, Illinois, and the EPA Office of Emergency and Remedial Response in Washington, D.C.

## CONTENTS

	<u>Page</u>
Abstract . . . . .	iii
Introduction . . . . .	1
Methodology . . . . .	7
Photo Analysis . . . . .	10
Glossary . . . . .	29
References . . . . .	31

## FIGURES

<u>Number</u>		
1	Study area location map, Illinois . . . . .	4
2	Local study area location map, Waukegan, Illinois . . . . .	5
3	Vacant Lot Site, July 20, 1939 . . . . .	11
4	Vacant Lot Site, May 11, 1953 . . . . .	13
5	Vacant Lot Site, July 19, 1954 . . . . .	15
6	Vacant Lot Site, October 20, 1967 . . . . .	17
7	Vacant Lot Site, May 4, 1976 . . . . .	19
8	Vacant Lot Site, March 23, 1981 . . . . .	21
9	Vacant Lot Site, March 29, 1986 . . . . .	23
10	Vacant Lot Site, March 25, 1994 . . . . .	25
11	Vacant Lot Site - Area of Concern, March 25, 1994 . . . . .	27

## INTRODUCTION

This report presents the results of analysis of historical photographs of the Vacant Lot Site and an Area of Concern extending for an approximate 0.5 mile radius around the site. The site and Area of Concern are situated on a relatively flat alluvial plain in North Chicago, Illinois (Figures 1 and 2). The Vacant Lot Site itself is approximately 1.8 acres in extent and consists of a portion of Pettibone Creek and adjacent vacant land. The Area of Concern (approximately 1 mile in diameter and 160 acres in extent) that surrounds the site is comprised of residential, commercial, and industrial land cover and land use. Surface drainage trends from north to south.

Eight dates of black and white and color historical photographs were used in the analysis of the site. The analysis examined photographs obtained in: 1939, 1953, 1954, 1967, 1976, 1981, 1986, and 1994.

Results of the analysis of the site itself revealed that in 1939 disturbed ground was visible east of Pettibone Creek. From 1953 through 1986, staining, excavations, mounded material, and tire tracks were present in the northeastern portion of the site at the end of an access road. Stain patterns trended into the nearby creek. In 1981 a shallow possible trench was noted immediately adjacent to the nearby industrial facility. In 1986, the shallow possible trench was filled and possible tire tracks were observed adjacent to the filled trench and at the industrial facility to the east. In 1994 no evidence of waste disposal activities was observed. Within the western portion of the site, footpaths and denuded areas were visible in 1976, 1981, and 1986.

Within the Area of Concern numerous buildings were constructed and dismantled during the study period. These are depicted on clear acetate overlays (Figure 11, Overlays 1 and 2) with labels denoting the year of observation. The symbol "N" refers to buildings constructed since the previous photo coverage and "D" refers to buildings dismantled since the previous photograph. The number (e.g., "67" referring to 1967) denotes the year that the observation was made.

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Waste-related features are depicted on Overlays 3 and 4. Most noteworthy of the waste-related features are areas of solid waste and standing liquid northeast of the site. These features were observed from 1953 to 1981 and from 1953 to 1994, respectively. Other features observed included: drums, solid waste, stains, standing liquid, raw materials storage, and mounded material.

Sources for all maps and aerial photographs used in this report and any collateral data consulted are listed in the References section of this report. A list of all aerial photographs that were identified and evaluated for usefulness can be obtained by contacting the EPA Work Assignment Manager.

The U.S. Environmental Protection Agency (EPA), Characterization Research Division, Monitoring Sciences Branch in Las Vegas, Nevada, prepared this report for the EPA Region 5 Hazardous Waste Management Division in Chicago, Illinois, and the EPA Office of Emergency and Remedial Response in Washington, D.C.

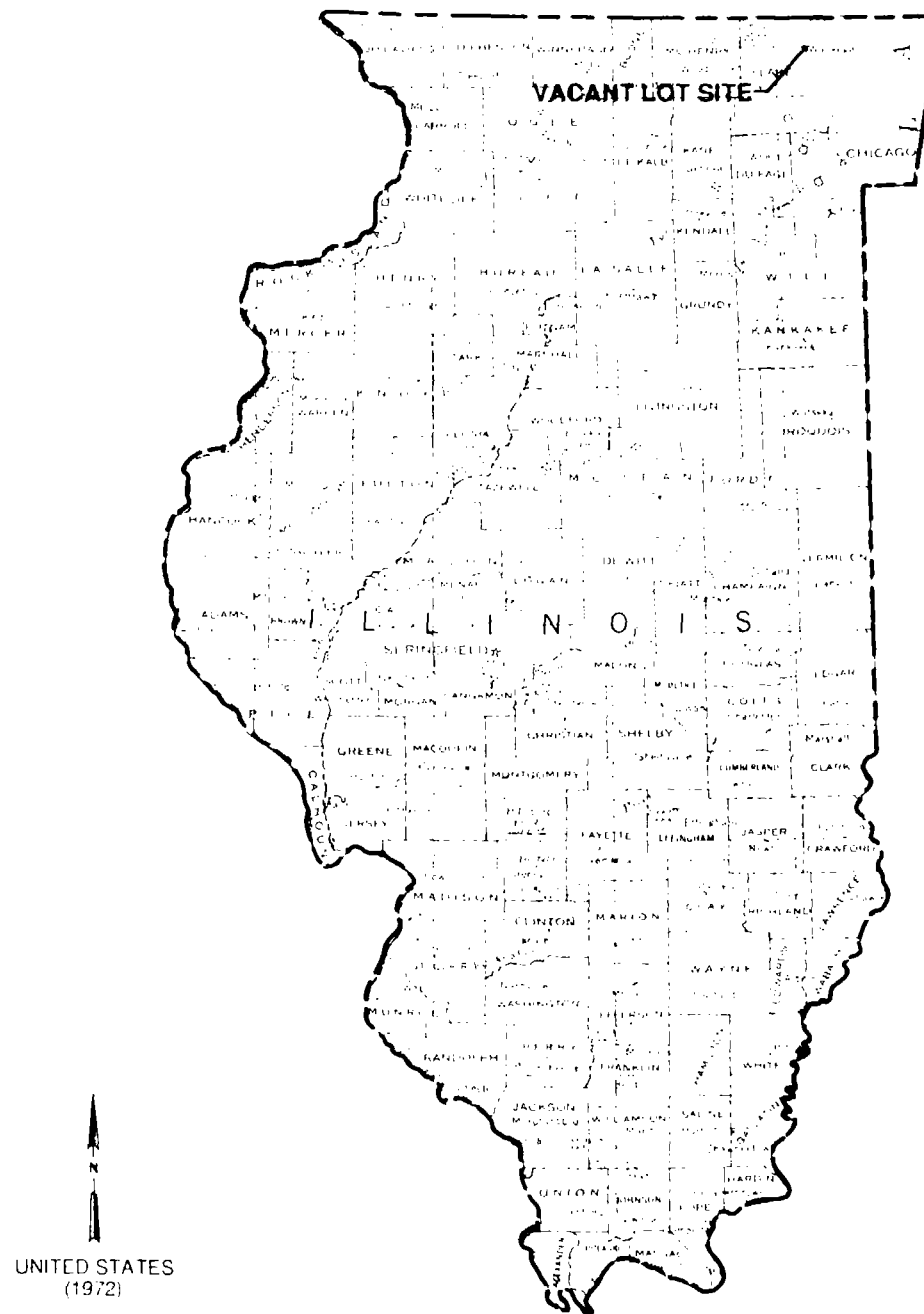


Figure 1. Study area location map, Illinois (USGS 1972). Approximate scale 1:2,800,000.



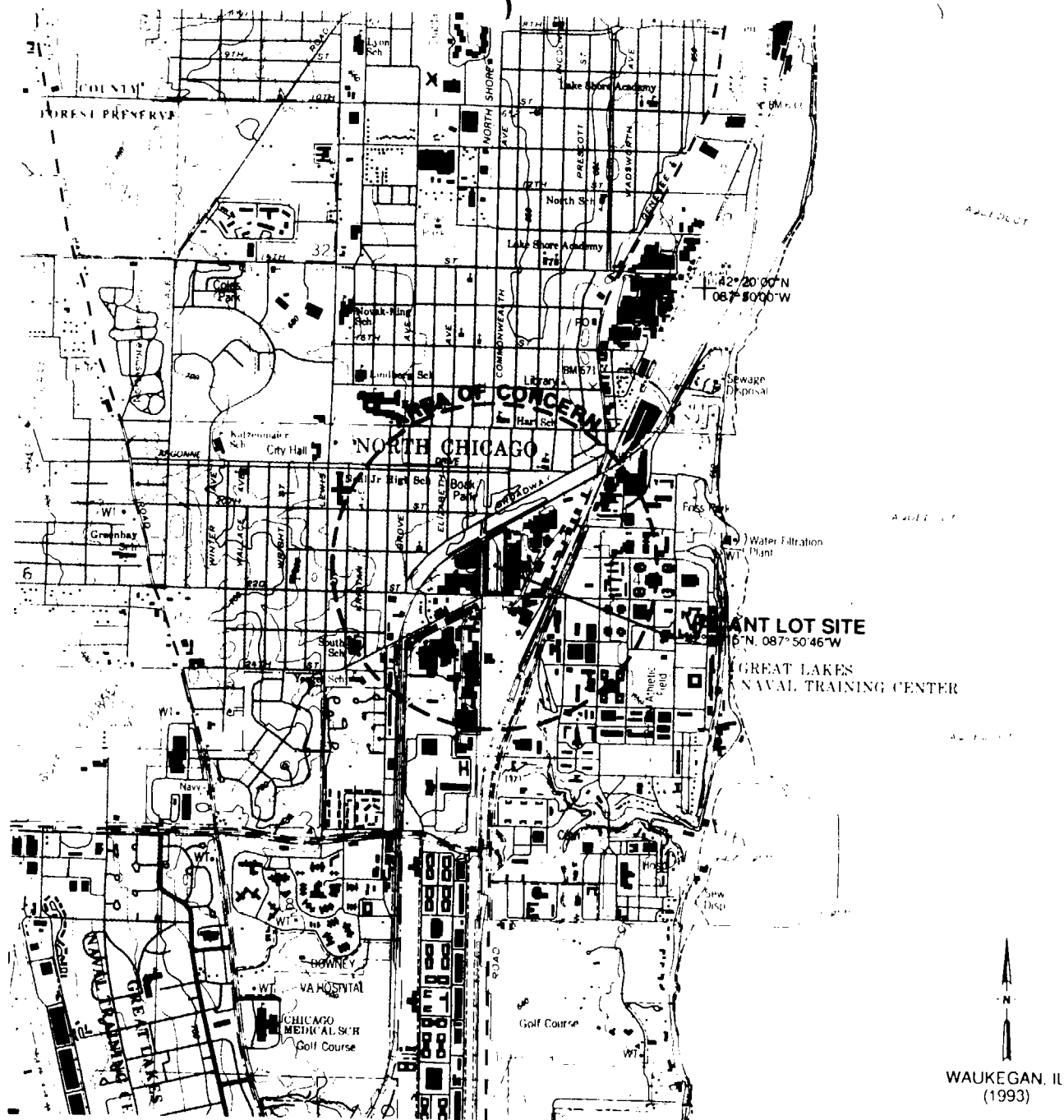


Figure 2. Local study area location map, Waukegan, Illinois (USGS 1993).  
Scale 1:24,000.

## METHODOLOGY

This report was prepared using a standard methodology that includes the following steps:

- data identification and acquisition,
- photographic analysis and interpretation, and
- graphics and text preparation.

These steps are described in this section. Subsections also address details related to specific kinds of analyses that may be required to identify environmental features such as surface drainage and wetlands.

Data identification and acquisition included a search of government and commercial sources of historical aerial photographs to identify and obtain photography with optimal spatial and temporal resolution and image quality for the study area. In addition, U.S. Geological Survey (USGS) topographic maps were obtained to show the study area location and to provide geographic and topographic context.

To conduct this analysis, the analyst obtained diapositives (transparencies) of historical aerial photographs showing the study area. Diapositives are most often used for analysis instead of prints because the diapositives have superior photographic resolution. They show minute details of significant environmental features that may not be discernible on a paper print.

A photographic analyst uses a stereoscope to view adjacent, overlapping pairs of diapositives on a backlit light table. In most cases, the stereoscope is capable of various magnifications up to 60 power. Stereoscopic viewing involves using the principle of parallax (observing a feature from slightly different positions) to observe a three-dimensional representation of the area of interest. The stereoscope enhances the photo interpretation process by allowing the analyst to observe vertical as well as horizontal spatial relationships of natural and cultural features.

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The process of photographic analysis involves the visual examination and comparison of many components of the photographic image. These components include shadow, tone, color, texture, shape, size, pattern, and landscape context of individual elements of a photograph. The photo analyst identifies objects, features, and "signatures" associated with specific environmental conditions or events. The term "signature" refers to a combination of components or characteristics that indicate a specific object, condition, or pattern of environmental significance. The academic and professional training, photo interpretation experience gained through repetitive observations of similar features or activities, and deductive logic of the analyst as well as background information from collateral sources (e.g., site maps, geologic reports, and soil surveys) are critical factors employed in the photographic analysis.

The analyst records the results of the analysis by using a standard set of annotations and terminology to identify objects and features observed in the diapositives. Significant findings are annotated on overlays attached to the photographs in the report and discussed in the accompanying text. Annotations that are self-explanatory may not be discussed in the text. The annotations are defined in the legend that accompanies each photograph..

Objects and features are identified in the graphics and text according to the analyst's degree of confidence in the evidence. A distinction is made between certain, probable, and possible identifications. When the analyst believes the identification is unmistakable, no qualifier is used. Probable is used when a limited number of discernible characteristics allows the analyst to be reasonably certain of a particular identification. Possible is used when only a few characteristics are discernible and the analyst can only infer an identification.

The photographs presented in this report are enlargements of portions of the diapositive images. Although the enlargements allow effective display of the interpretive annotations, they also result in loss of photographic resolution. Therefore, some of the objects and features identified in the original image and described in the text may not be clearly discernible on the prints in this report.

Study area boundaries shown in this report were determined from aerial photography or collateral data and do not denote legal property lines or ownership.

#### Surface Drainage

The surface drainage analysis produced for this report identifies the direction and potential path that a liquid spill or surface runoff would follow based on the topography of the terrain and the presence of discernible obstacles to surface flow. The analyst determines the direction of surface drainage by stereoscopic analysis of the aerial photographs and by examining USGS topographic maps. Site-specific surface drainage patterns are annotated on the map or photo overlay. Where the direction of subtle drainage cannot be determined, an indeterminate drainage line symbol is used. Regional surface flow is ascertained from the USGS topographic maps.

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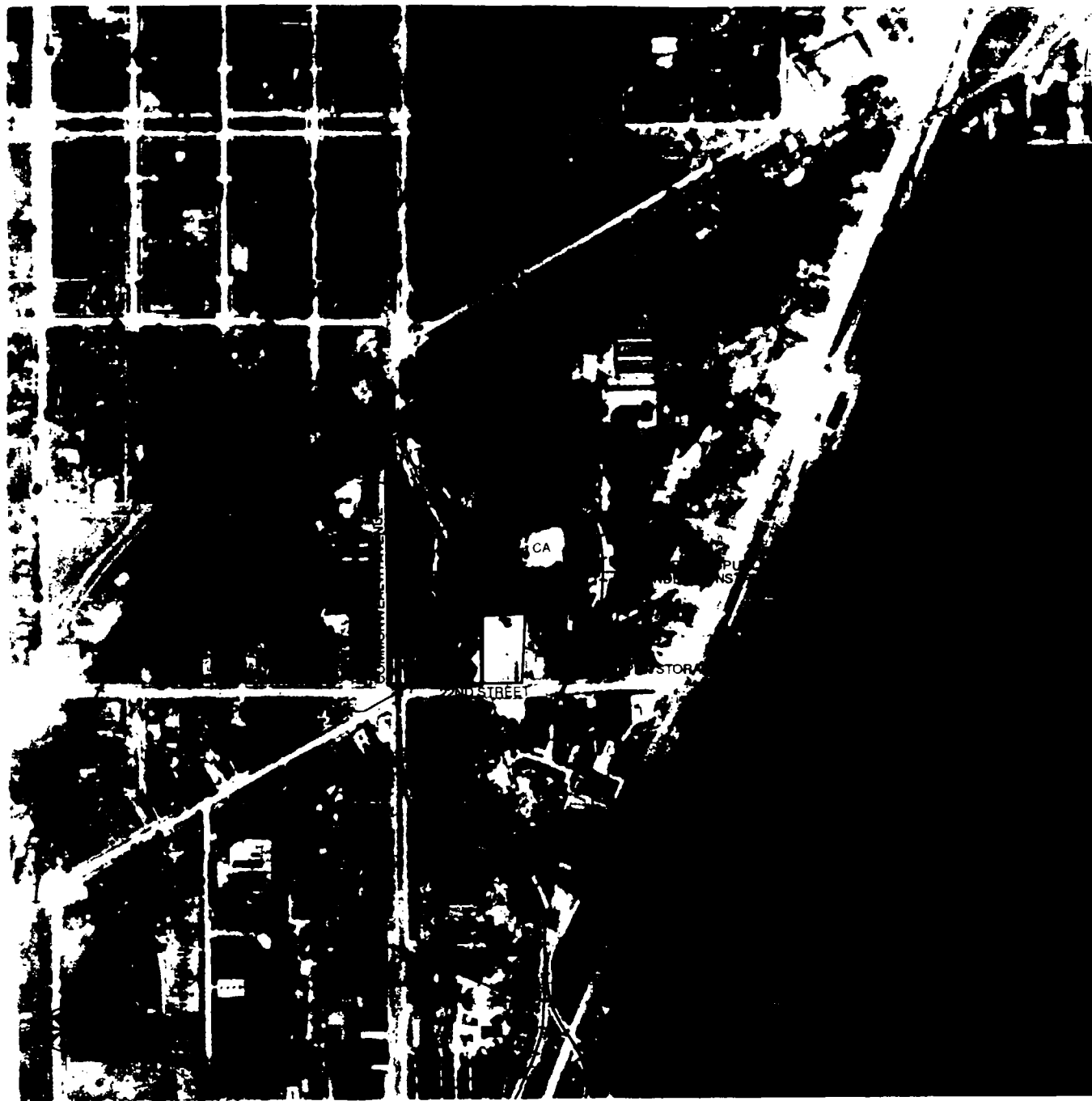
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## PHOTO ANALYSIS

JULY 20, 1939 (FIGURE 3)

Photographic resolution is poor on this photograph, thus precluding a more definitive assessment of the site.

Pettibone Creek flows south through the center of the site which consists of natural grassland and scattered trees. A disturbed area is observed near the northern end of the creek near a railroad overpass. Another similar area is visible to the southeast. What appears to be footpaths are seen between the disturbed areas, the creek, and an open storage area outside the southeastern corner of the site. A portion of the embankments of Pettibone Creek are denuded of vegetation. To the east of the site, construction of a railroad spur is in progress.



# INTERPRETATION CODE

## BOUNDARIES AND LIMITS

- FENCED SITE BOUNDARY
- UNFENCED SITE BOUNDARY
- XXXXXX FENCE
- STUDY AREA

## DRAINAGE

- DRAINAGE
- FLOW DIRECTION
- INDETERMINATE DRAINAGE

## TRANSPORTATION/UTILITY

- ===== VEHICLE ACCESS
- RAILWAY

## SITE FEATURES

- DIKE
- SL STANDING LIQUID
- SL STANDING LIQUID
- EP EXCAVATION PIT (EXTENSIVE)
- EP MOUNDED MATERIAL (EXTENSIVE)
- MM MOUNDED MATERIAL (SMALL)
- CR CRATES BOXES
- DR DRUMS
- HT HORIZONTAL TANK
- PT PRESSURE TANK
- VT VERTICAL TANK
- CA CLEARED AREA
- DG DISTURBED GROUND
- FL FILL
- IM IMPOUNDMENT
- LG LAGOON
- OT OUTFALL
- SD SLUDGE
- ST STAIN
- SW SOLID WASTE
- TR TRENCH
- VS VEGETATION STRESS
- WD WASTE DISPOSAL AREA
- WV WETLAND VEGETATION

Figure 3. Vacant Lot Site, July 20, 1939. Approximate scale 1:4,910.

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MAY 11, 1953 (FIGURE 4)

The site is relatively flat, with a slightly higher elevation in the northern portion of the site (not discernable in 1939). An area of light-toned material and a stained area are visible in the northern portion of the site. Two small excavations are noted within the light-toned material. The southeast portion of the site is used for parking. The western portion of the site remains wooded and appears to be undisturbed.



# INTERPRETATION CODE

## BOUNDARIES AND LIMITS

- FENCED SITE BOUNDARY
- UNFENCED SITE BOUNDARY
- XXXXXX FENCE
- STUDY AREA

## DRAINAGE

- DRAINAGE
- FLOW DIRECTION
- INDETERMINATE DRAINAGE

## TRANSPORTATION/UTILITY

- ==== VEHICLE ACCESS
- RAILWAY

## SITE FEATURES

- DIKE
- STANDING LIQUID
- STANDING LIQUID
- EXCAVATION, PIT (EXTENSIVE)
- MOUNDLED MATERIAL (EXTENSIVE)
- MM MOUNDLED MATERIAL (SMALL)
- CR CRATES BOXES
- DR DRUMS
- HT HORIZONTAL TANK
- PT PRESSURE TANK
- VT VERTICAL TANK
- CA CLEARED AREA
- DG DISTURBED GROUND
- FI FILL
- IM IMPOUNDMENT
- EG LAGOON
- OF OUTFALL
- SD SLUDGE
- ST STAIN
- SW SOLID WASTE
- TR TRENCH
- VS VEGETATION STRESS
- WD WASTE DISPOSAL AREA
- WV WETLAND VEGETATION

Figure 4. Vacant Lot Site, May 11, 1953. Approximate scale 1:1,970.



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JULY 19, 1954 (FIGURE 5)

Since 1953 the extent and shape of areas of light-toned material and stains have changed. This may indicate that deposition or storage of material has occurred. Two large stains are visible. The larger stain appears to have been caused by disposal of liquid within the stained area. It appears that a portion of the liquid flowed to the northeast and was diverted by an accumulation of light-toned material. Another portion of the disposed liquid flowed to the southwest toward Pettibone Creek. Two small gullies are noted north of the large stain. Some light-toned material is visible on the eastern embankment of the creek.

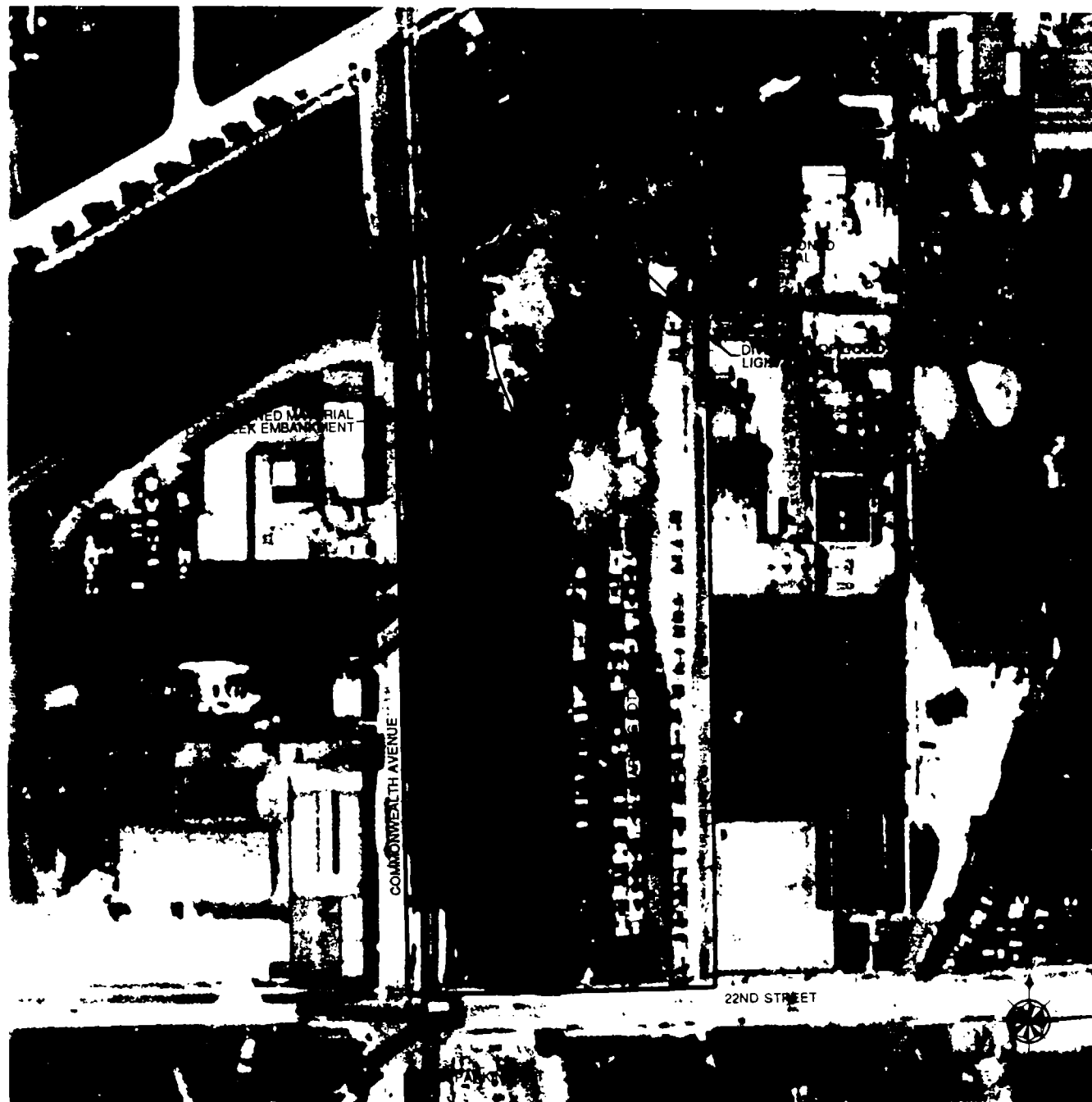


Figure 5. Vacant Lot Site, July 19, 1954. Approximate scale 1:1,740.

## INTERPRETATION CODE

### BOUNDARIES AND LIMITS

- FENCED SITE BOUNDARY
- UNFENCED SITE BOUNDARY
- XXXXXX FENCE
- STUDY AREA

### DRAINAGE

- DRAINAGE
- FLOW DIRECTION
- INDETERMINATE DRAINAGE

### TRANSPORTATION-UTILITY

- ===== VEHICLE ACCESS
- ++++ RAILWAY

### SITE FEATURES

- DIKE
- STANDING LIQUID
- STANDING LIQUID
- EXCAVATION, PIT (EXTENSIVE)
- MOUNDED MATERIAL (EXTENSIVE)
- MOUNDED MATERIAL (SMALL)
- CRATES BOXES
- DRUMS
- HORIZONTAL TANK
- PRESSURE TANK
- VERTICAL TANK
- CLEARED AREA
- DISTURBED GROUND
- FILL
- IMPOUNDMENT
- LAGOON
- OUTFALL
- SLUDGE
- STAIN
- SOLID WASTE
- TRENCH
- VEGETATION STRESS
- WASTE DISPOSAL AREA
- WETLAND VEGETATION

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OCTOBER 20, 1967 (FIGURE 6)

Fill, possible waste material, and dark-toned material have been deposited along the northern portion of the Pettibone Creek. The accumulations of these materials are approximately 5 to 10 feet in height. Two probable stains and a graded area are also present. Unidentified objects (possible debris) are visible at the northern end of the fill and possible waste material area. Areas of sparse vegetation (possibly vegetation stress) are visible along both sides of the access road. Trees and brush visible in 1954 on the western side of the site have been removed and a cleared area is visible. This area was graded between 1954 and 1967 and is partially revegetated. An unidentified linear object spans the creek.



# INTERPRETATION CODE

## BOUNDARIES AND LIMITS

- FENCED SITE BOUNDARY
- UNFENCED SITE BOUNDARY
- XXXXXX FENCE
- STUDY AREA

## DRAINAGE

- DRAINAGE
- FLOW DIRECTION
- INDEFINITE DRAINAGE

## TRANSPORTATION/UTILITY

- ===== VEHICLE ACCESS
- +++++ RAILWAY

## SITE FEATURES

- DIKE
- STANDING LIQUID
- STANDING LIQUID
- EXCAVATION PIT (EXTENSIVE)
- MOUNDED MATERIAL (EXTENSIVE)
- MM MOUNDED MATERIAL (SMALL)
- CR GRATES BOXES
- DR DRUMS
- HT HORIZONTAL TANK
- PT PRESSURE TANK
- VT VERTICAL TANK
- CA CLEARED AREA
- DG DISTURBED GROUND
- FI FILL
- IM IMPOUNDMENT
- LG LAGOON
- OE OUTFALL
- SD SLUDGE
- ST STAIN
- SW SOLID WASTE
- TR TRENCH
- VS VEGETATION STRESS
- WD WASTE DISPOSAL AREA
- WV WETLAND VEGETATION

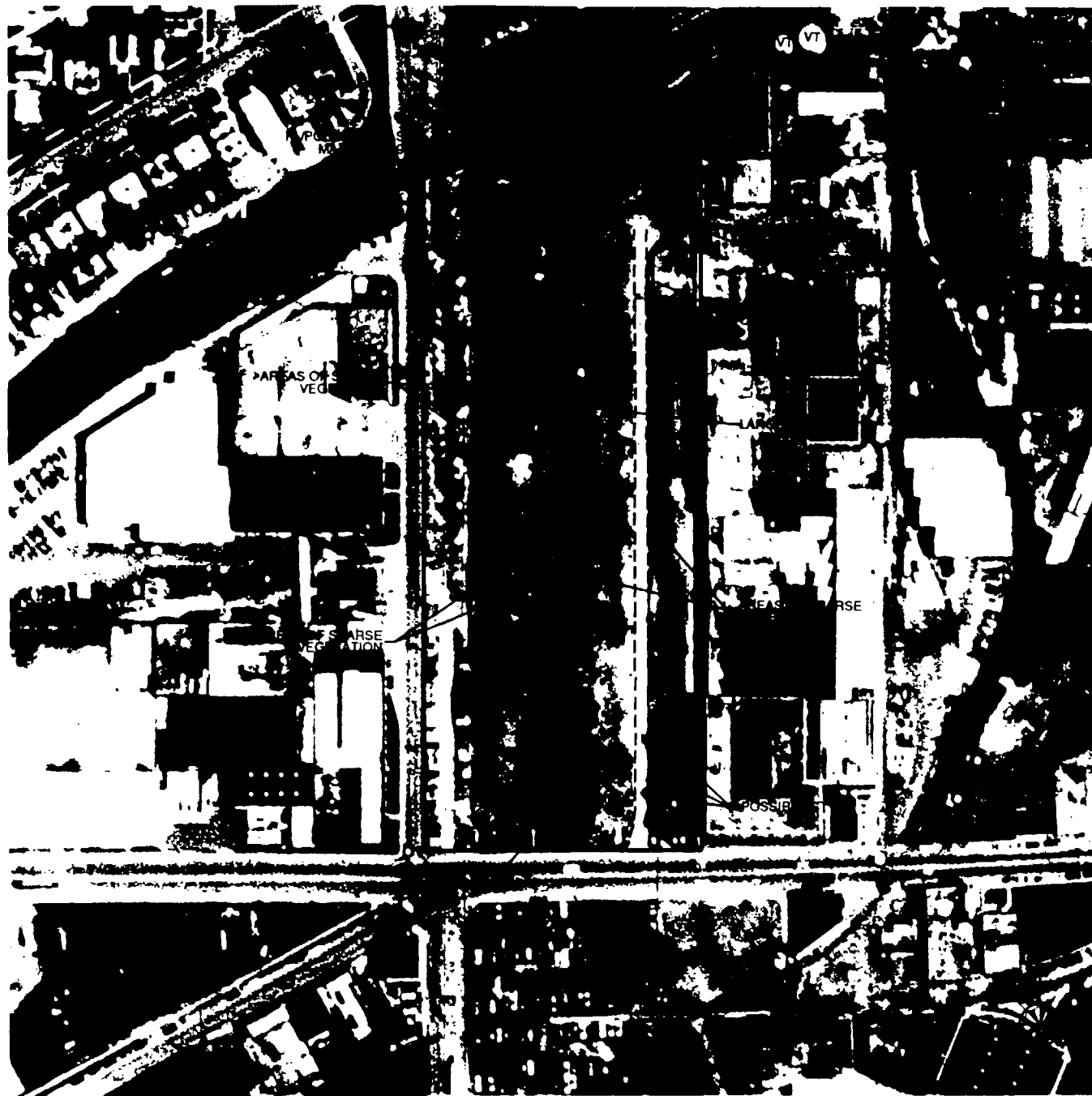
Figure 6. Vacant Lot Site, October 20, 1967. Approximate scale 1:1,710.

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MAY 4, 1976 (FIGURE 7)

The large area of fill and possible waste material seen in 1967 has revegetated. Three new stains are noted nearby. In the northeast portion of the site is a large probable stain. A portion of this large probable stain trends southwest and then south along the access road. Possible stains are observed at the southern end of the access road. Areas of sparse vegetation (possibly vegetation stress) located on both sides of the north-south oriented access road are again visible. These areas persist for the remainder of the study period and will not be discussed further. A large gully is visible next to Pettibone Creek. West of the creek, new areas of sparse vegetation are present.

Within the industrial facility east of the site is a large stained area containing debris and solid waste.



## INTERPRETATION CODE

### BOUNDARIES AND LIMITS

- FENCED SITE BOUNDARY
- UNFENCED SITE BOUNDARY
- XXXXX FENCE
- STUDY AREA

### DRAINAGE

- DRAINAGE
- FLOW DIRECTION
- INDETERMINATE DRAINAGE

### TRANSPORTATION/UTILITY

- ===== VEHICLE ACCESS
- +++++ RAILWAY

### SITE FEATURES

- DIKE
- STANDING LIQUID
- STANDING LIQUID
- EXCAVATION, PIT (EXTENSIVE)
- MOUNDED MATERIAL (EXTENSIVE)
- MOUNDED MATERIAL (SMALL)
- CRATES/BOXES
- DRUMS
- HORIZONTAL TANK
- PRESSURE TANK
- VERTICAL TANK
- CLEARED AREA
- DISTURBED GROUND
- FILL
- IMPOUNDMENT
- LAGOON
- OUTFALL
- SLUDGE
- STAIN
- SOLID WASTE
- TRENCH
- VEGETATION STRESS
- WASTE DISPOSAL AREA
- WETLAND VEGETATION

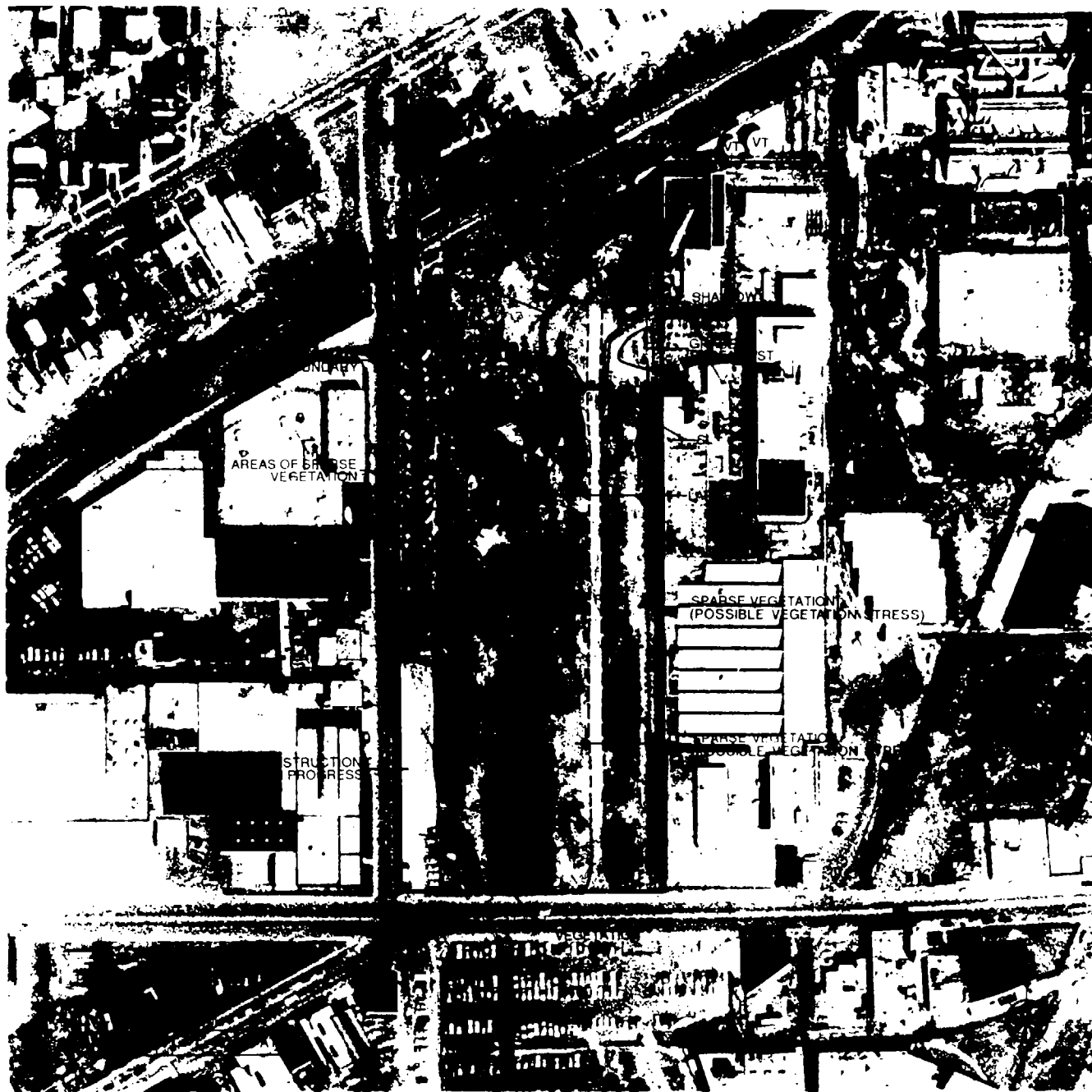
Figure 7. Vacant Lot Site, May 4, 1976. Approximate scale 1:1,800.

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MARCH 23, 1981 (FIGURE 8)

A shallow possible ditch is visible in the northeast part of the site. A stain surrounds the possible ditch. South of the ditch, the stain exhibits a pattern similar to that observed in 1976. It trends southwest and then south along the side of the road. At a point where it crosses the road, standing liquid is visible. A large stained area is visible west of the access road. Further to the west the stain becomes somewhat channelized and it trends into the creek.

Sparse areas of vegetation connected by footpaths are noted on the western side of the site.



## INTERPRETATION CODE

### BOUNDARIES AND LIMITS

- x—x—x— FENCED SITE BOUNDARY
- UNFENCED SITE BOUNDARY
- xxxxxx FENCE
- STUDY AREA

### DRAINAGE

- DRAINAGE
- FLOW DIRECTION
- INDETERMINATE DRAINAGE

### TRANSPORTATION-UTILITY

- ===== VEHICLE ACCESS
- +++++ RAILWAY

### SITE FEATURES

- ||||| DIKE
- STANDING LIQUID
- STANDING LIQUID
- EXCAVATION, PIT (EXTENSIVE)
- MOUNDED MATERIAL (EXTENSIVE)
- MM MOUNDED MATERIAL (SMALL)
- CR GRATES-BOXES
- DR DRUMS
- HT HORIZONTAL TANK
- PT PRESSURE TANK
- VT VERTICAL TANK
- CA CLEARED AREA
- DG DISTURBED GROUND
- FL FILL
- IM IMPOUNDMENT
- LG LAGOON
- OF OUTFALL
- SD SLUDGE
- ST STAIN
- SW SOLID WASTE
- TR TRENCH
- VS VEGETATION STRESS
- WD WASTE DISPOSAL AREA
- WV WETLAND VEGETATION

Figure 8. Vacant Lot Site, March 23, 1981. Approximate scale 1:2,000.



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MARCH 29, 1986 (FIGURE 9)

The shallow possible ditch seen in 1981 appears to be filled. Possible tire tracks within the adjacent industrial facility (directly across from the filled shallow possible ditch) lead directly to a fence line that separates the facility and the site. It could not be determined if a gate is present at this location.

A number of other tire tracks are visible at the north end of the access road. The pattern of the stain south of the filled trench seen in 1976 and 1981 is again visible although it does not appear to cross the road. To the north are two, small empty trenches. Three stains are visible near the creek. One of these, a large linear stain, trends south to an area near the north end of the large gully. Possible stains and a graded area are visible in the southern portion of the site. Little change is noted in the footpaths and sparsely vegetated areas west of Pettibone Creek.

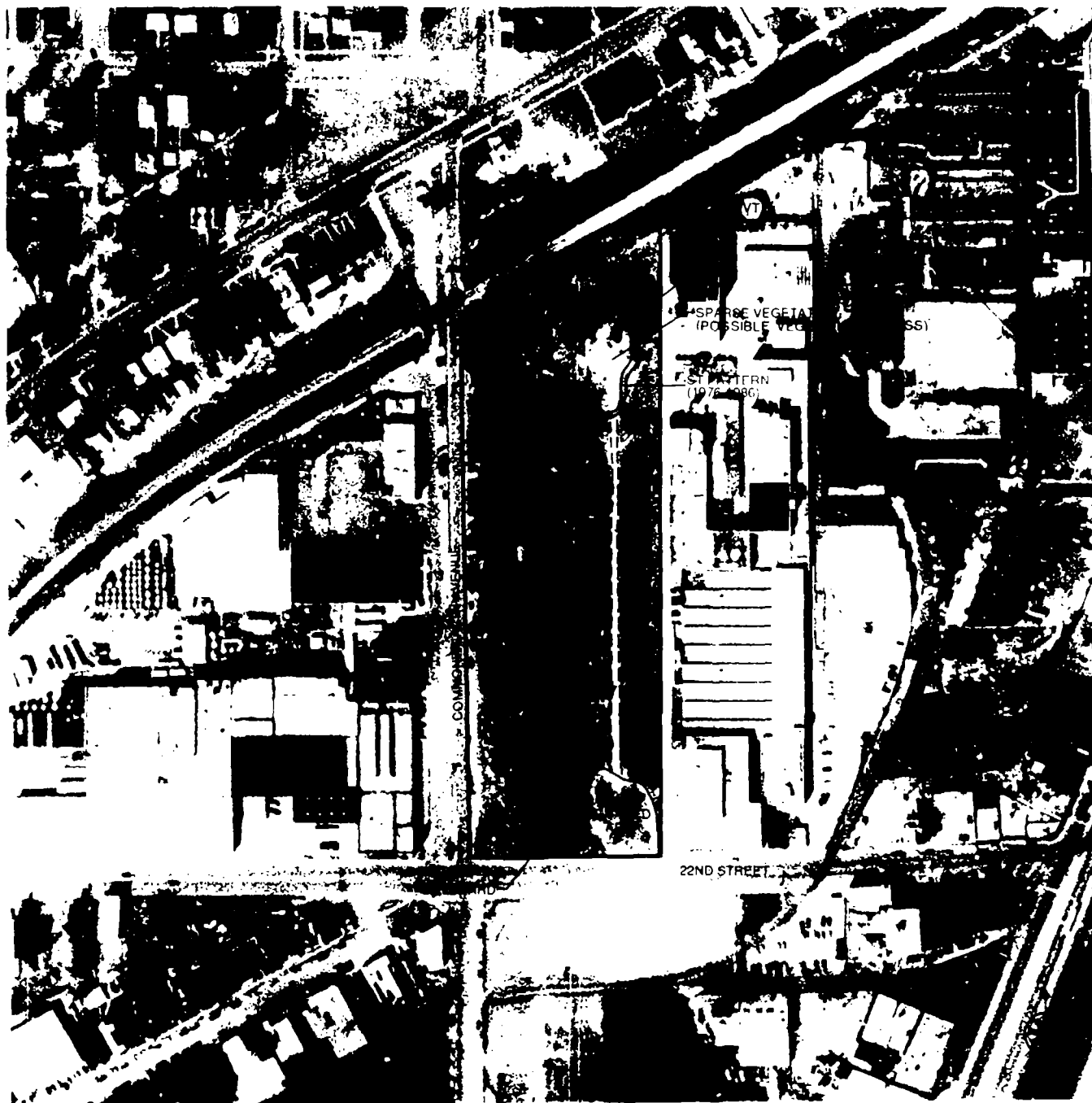
At the northern end of the adjacent industrial facility two drum storage areas are noted; stains are associated with one of these areas.



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MARCH 25, 1994 (FIGURE 10)

Poor photographic resolution of this photograph precludes a detailed assessment of the site. No new tire tracks, stains, or other features indicative of waste disposal activities are visible. The pattern of the stain seen from 1976 to 1986 is still visible at the north end of the access road. The graded area at the south end of the road has increased in extent. The entire site appears to be revegetating. On the western side of the site no areas of sparse vegetation or footpaths visible in previous years are noted.



## INTERPRETATION CODE

### BOUNDARIES AND LIMITS

- FENCED SITE BOUNDARY
- UNFENCED SITE BOUNDARY
- xxxxxx FENCE
- STUDY AREA

### DRAINAGE

- DRAINAGE
- FLOW DIRECTION
- INDETERMINATE DRAINAGE

### TRANSPORTATION-UTILITY

- ===== VEHICLE ACCESS
- +++++ RAILWAY

### SITE FEATURES

- DIKE
- SL STANDING LIQUID
- SL STANDING LIQUID
- EX EXCAVATION PIT (EXTENSIVE)
- MO MOUNDED MATERIAL (EXTENSIVE)
- MM MOUNDED MATERIAL (SMALL)
- CB CRATES BOXES
- DR DRUMS
- HT HORIZONTAL TANK
- PT PRESSURE TANK
- VT VERTICAL TANK
- CA CLEARED AREA
- DG DISTURBED GROUND
- FI FILL
- IM IMPOUNDMENT
- LG LAGOON
- OF OUTFALL
- SL SLUDGE
- ST STAIN
- SW SOLID WASTE
- TE TRENCH
- VS VEGETATION STRESS
- WD WASTE DISPOSAL AREA
- WV WETLAND VEGETATION

Figure 10. Vacant Lot Site, March 25, 1994. Approximate scale 1:2,270.

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MARCH 25, 1994 (FIGURE 11)

This enlargement depicts the Area of Concern around the site. Depicted on Overlays 1 and 2 are new and dismantled buildings labeled by year of occurrence. Overlays 3 and 4 depict all waste storage/disposal-related features within the area. All buildings and waste-related features are labeled with year(s) of observation.

Of the waste-related features, solid waste (1953-81) and standing liquid (1953-1994) located northeast of the site are noteworthy. Also, two areas of raw material storage, crates, stains, and dark-toned material were identified southwest and east of the site, respectively. All other waste-related features appear to be of a short-lived nature and do not seem to exhibit any long-term trends.

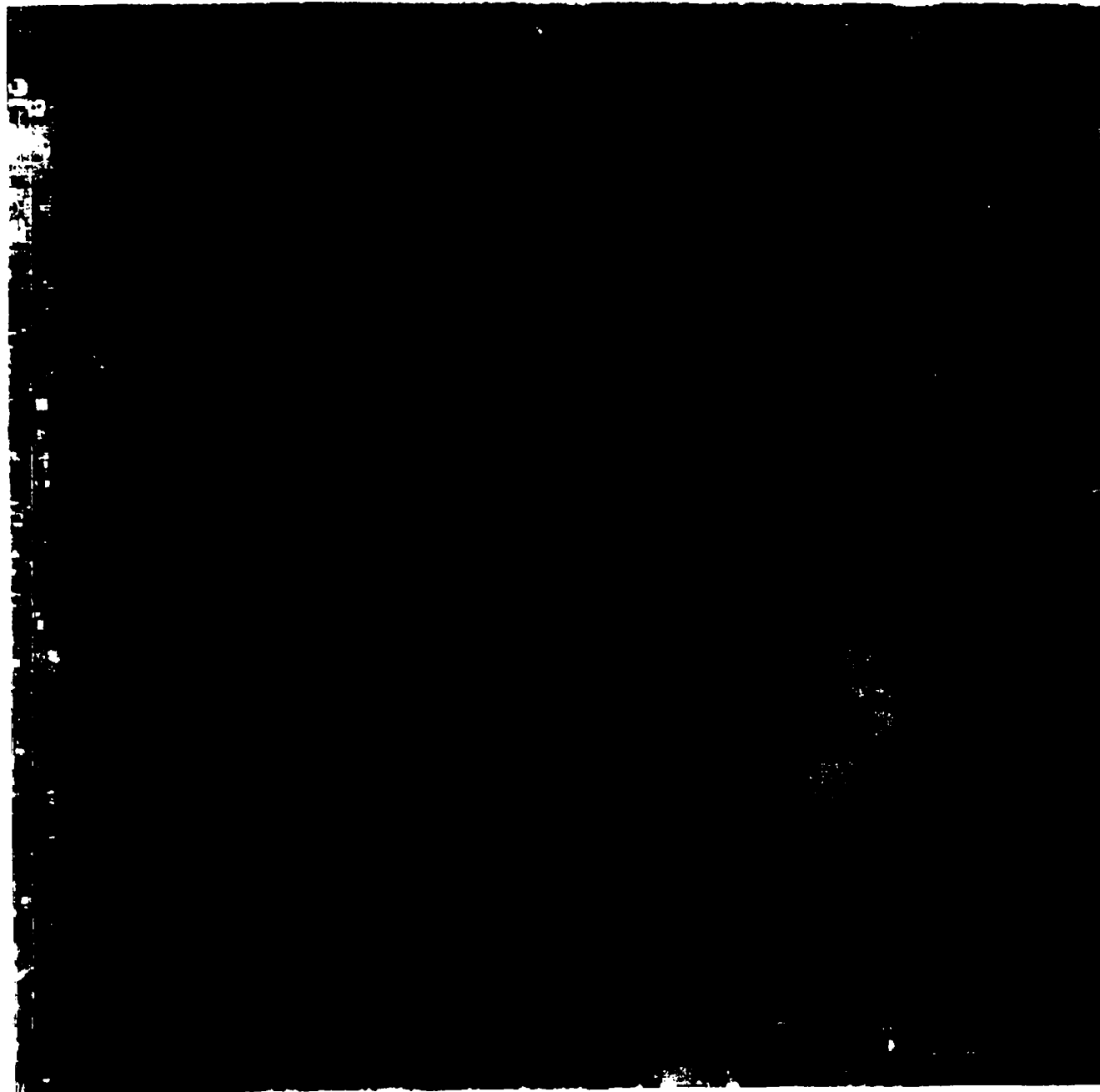


Figure 11. Vacant Lot Site - Area of Concern, March 25, 1994. Approximate scale 1:7,710.

## INTERPRETATION CODE

### BOUNDARIES AND LIMITS

- x-x-x-x-x FENCED SITE BOUNDARY
- UNFENCED SITE BOUNDARY
- x x x x x x FENCE
- STUDY AREA

### DRAINAGE

- DRAINAGE
- FLOW DIRECTION
- INDETERMINATE DRAINAGE

### TRANSPORTATION/UTILITY

- ===== VEHICLE ACCESS
- ++++ RAILWAY

### SITE FEATURES

- DIKE
- SL STANDING LIQUID
- SL STANDING LIQUID
- EP EXCAVATION, PIT (EXTENSIVE)
- MM MOUNDED MATERIAL (EXTENSIVE)
- MM MOUNDED MATERIAL (SMALL)
- CR CRATES BOXES
- DR DRUMS
- HT HORIZONTAL TANK
- PT PRESSURE TANK
- VT VERTICAL TANK
- CA CLEARED AREA
- DG DISTURBED GROUND
- FI FILL
- IM IMPOUNDMENT
- LG LAGOON
- OF OUTFALL
- SD SLUDGE
- SI STAIN
- SW SOLID WASTE
- TE TRENCH
- VS VEGETATION STRESS
- WD WASTE DISPOSAL AREA
- WV WETLAND VEGETATION

## GLOSSARY

Access Road - A paved or unpaved route of vehicular access.

Dark, Medium, or Light-Toned - Tones of features in question are compared with the darkest and lightest tones of gray (if using B&W photography) on the print.

Debris - The remains of anything that can be identified as being broken down, destroyed, demolished, or dismantled.

Disturbed Ground (DG) - A rough area where the ground surface has been dug up or overturned

Ditch - A long narrow excavation, as for draining or irrigating land.

Drums (DR) - Metal cylinders used for the storage, transportation, or disposal of materials

Excavation Area - An area where earth or other material is being removed in order to alter the ground level (e.g., building construction).

Fill (FL) - Earth, stones, or other material that is used to build up the level of an area of ground.

Graded Area - An area where the surface of the ground has been leveled or altered by a vehicle pulling or pushing a wide blade.

Mounded Material (MM) - Piles of raw or waste materials on or in the vicinity of the site

Open Storage Area - An area of open-air (outdoor) storage of containerized, raw or waste materials, within industrial or manufacturing sites

Solid Waste (SW) - Any garbage, refuse, or sludge from a waste treatment, water supply treatment plant, or air pollution control facility, and other discarded material, including solid or semi-solid material resulting from industrial, commercial, mining, and agricultural operations, and from community activities; does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges.

Stain (ST) - A residue or discoloration resulting from a spill, discharge, or removed/dispersed materials.

Standing Liquid (SL) - A small, shallow, temporary collection of liquid, not necessarily waste. Not to include liquid contained in impoundments, trenches, pits, etc

Trench (TR) - A long, narrow excavation unrelated to drainage.

## REFERENCES

### AERIAL PHOTOGRAPHY

Photo source	Figure	Date of acquisition	Original scale	Film type*	Photo I.D.	Source frame #	EPIC frame #
ASCS <sup>1</sup>	3	07-20-39	1:20,000	B&W	BWX	99	-
USGS <sup>2</sup>	4	05-11-53	1:20,000	B&W	GS-YI	45	20475
ASCS	5	07-19-54	1:20,000	B&W	BWX	132	26
ASCS	6	10-20-67	1:20,000	B&W	BWX	256	58
NOS <sup>3</sup>	7	05-04-76	1:30,000	CC	762C	4477	-
EPIC <sup>4</sup>	8	03-23-81	1:24,000	B&W	81200	47	20680
SIDWELL <sup>5</sup>	9	03-29-86	1:10,000	B&W	LAKECO26	61	-
USGS	10,11	03-25-94	1:40,000	B&W	NAFP	61	-

\*Film type identification:  
 B&W Black-and-white  
 CC Conventional Color

### MAPS

Source	Figure	Name	Scale	Date
USGS	1	United States	1:2,500,000	1972
USGS	2	Waukegan	1:24,000	1993

### PUBLICATIONS

EPA. 1996. Vacant Lot Site Background and Statement of Issues and site maps.  
 Collateral data supplied by EPA Region 5 as attachment to EPIC Remote Sensing  
 Services Request Form (10/10/96) 7pp.

<sup>1</sup>ASCS U.S. Department of Agriculture, Agricultural Stabilization and  
 Conservation Service, Washington, D.C.  
<sup>2</sup>USGS U.S. Department of Interior, U.S. Geological Survey, Washington, D.C.  
<sup>3</sup>NOS National Ocean Service, Coast and Geodetic Survey, Washington, D.C.  
<sup>4</sup>EPIC U.S. Environmental Protection Agency, Environmental Photographic  
 Interpretation Center, Las Vegas, Nevada.  
<sup>5</sup>SIDWELL Sidwell Corporation, Des Moines, Iowa